

# **Master of Arts (Economics)**

## **Two-Year Full-Time Programme**

### **Revised Rules, Regulations and Syllabus**

**With effect from Academic Year 2025-26**



**Department of Economics**

**School of Social Sciences**

**Doon University**

**Dehradun, Uttarakhand-248001**

## About the Programme

The Department of Economics offers two-year MA/MSc degree in Economics. It aims to become a globally recognized institution of excellence in the field of Economics. The emphasis is on research-based teaching and learning activities in an interactive environment with a focus on ‘holistic knowledge’ and exposure to critical understanding of contemporary socio-economic issues. The programme equips students with analytical skills and their applications in different fields of economics with the help of quantitative methods and hands on practice on different statistical software, necessary for a proper understanding of the discipline. The programme enables students to understand proper policy responses to economic problems and trains them in data collection and analysis with the applications of statistical and econometric methods for honing their skills for real-world situations.

Students are encouraged to engage in a variety of activities such as brainstorming discussions and debates on contemporary social and economic issues through seminars, workshops and panel discussions. The teaching and learning are encouraged in an interactive mode with extensive applications of econometric tools and techniques. For this, the Department is equipped with a dedicated EcoLab to learn applied economics.

## Programme Educational Objectives

The main objectives of the Master’s programme in Economics are:

- To offer holistic knowledge in an engaging environment, where the teaching and learning of Economics is closely linked with nationally and internationally recognized research, fostering a transformative learning experience for students.
- To develop theoretical competence with an in-depth understanding, enabling students to analyze complex real world economic phenomena with rigor and clarity.
- To equip students with quantitative and analytical skills and their applications in different fields of economics essential for empirical research and evidence-based policy-making.
- To train students for dynamic career in the corporate sector, academics, public policy, data analytics, banking, economic journalism, and international development.
- To promote research and innovation by encouraging original thinking through research projects, dissertations, and seminars that cultivate critical analysis, academic writing, and presentation skills.
- To cultivate inclusive attitudes and behaviors that are free from gender bias and respectful of all races, nationalities, religions, cultures, languages, and traditions.
- To foster a mindset that motivates individuals to pursue self-directed goals, entrepreneurial initiatives, and leadership development.

## Programme Learning Outcomes

After completion of the programme, students are well equipped with:

- Broad understanding and interpretation of various basic economic theories
- Knowledge of the mathematical and statistical techniques necessary for a proper understanding of the discipline
- First-hand knowledge of the real world economic issues and problems facing the country and the world
- Collection of information and applications of various statistical techniques and software for economic analysis
- Utilise technology and data science tools in economic research and decision-making
- Analyze economic problems with a critical and ethical lens, recognizing the socio-economic impact of policy decisions and promoting equitable and sustainable development.
- Critical thinking and enabling students to tackle economic challenges and contribute as leaders or active participants in societal development.
- Become an enlightened citizen for understanding economic issues
- Life learning through continuous self-improvement, engaging in independent and ongoing learning in response to economic, societal, and technological shifts.

### **Structure of the Master of Arts (Economics) Programme:**

The Masters of Arts (Economics) is a two-year (four-semester) career-oriented programme.

The University follows a semester-based system, with one academic year comprising two semesters:

- First Semester: Starts in July
- Second Semester: Starts in January

Each course runs for one semester and is assigned a specific number of credits based on contact hours. Students are required to complete a minimum number of credits to post graduate from the program.

The updated syllabus will be implemented starting the academic session 2025-2026.

### **Eligibility**

Applicants must hold a graduate degree in any discipline with at least 50% marks or as per University rules.

Admission to the Masters of Arts (Economics) programme will be conducted through an entrance examination.

### **Course Work**

The coursework, comprising core courses and elective courses, is designed to provide advanced knowledge in specialized areas relevant to the programme. The focus is on fostering the overall development of communication and research skills in students. To maximize their potential, teaching methodologies include lectures, practical, fieldwork, internships,

seminars, and assignments, all linked to courses with specific credit requirements and prescribed contact hours. Tutorials, group discussions and student seminars ensure close interaction between students and teachers.

### **Key Points**

*Credits:* The minimum and maximum course credit load per semester for each academic program shall be determined by the Academic Council.

*Repeating Courses:* Students failing a course are required to repeat it.

*Discipline Specific and Elective Papers:* All Discipline-Specific Core (DSC) and Skill Enhancement Course (SEC) papers are compulsory in all semesters.

Students may opt for two to three additional Discipline-Specific Elective (DSE) papers, subject to the following conditions:

- The availability of DSE papers will depend on the number of students and the faculty available.
- A minimum of seven (7) students must enrol in a particular specialization.
- Faculty availability for the specialization is mandatory.

### **Class Attendance**

- Students must maintain a minimum attendance of 75% of the total classes held in a course to be eligible for the semester examination.
- The Vice Chancellor may condone a shortage of attendance up to 5%, based on the recommendation of the advisor and the Dean, under conditions prescribed by the Academic Council.
- Students falling short of the required attendance in a course will automatically fail the course, regardless of marks obtained.

### **Conduct of Semester Examination**

Students will be continuously evaluated through the following examinations and assessments:

#### **1. Theory Courses:**

##### **(a) Mid-Term Examination:**

- Weightage: 30 marks

##### **(b) Semester Final Examination:**

- Weightage: 50 marks (Theory)

##### **(c) Internal Assessment:**

Distribution of 20 marks may be based on:

- Performance in the class
- Attendance
- Class assignments
- Class tests
- Presentations and seminars
- Viva

## **2. Practical Courses/Internship**

**Marks out of 100 will be distributed as follows:**

- 30 marks: Written examination/Presentation of Report of Internship
- 10 marks: Record Book
- 20 marks: Viva voce
- 40 marks: Internal assessment

### **d. The Evaluation of Dissertation**

- i. Proposal and Review Dissertation Document: 30%**
  - Assesses the quality, novelty and feasibility of the research proposal.
  - Evaluates the overall quality of the written dissertation, including research design, data analysis, interpretation of results, references and adherence to academic and ethical guidelines.
- ii. Internal Assessment: 20%**
  - Based on periodic evaluations by the supervisor/co-supervisor, focusing on the student's regularity, commitment, and progress during the dissertation process.
  - Includes assessment of the student's ability to meet deadlines and may also account for marks from interim presentations or assignments related to the dissertation.
- iii. Publication in Peer-Reviewed Journal or Edited Book: 20%**
  - Publication in a peer-reviewed journal with an ISSN or contribution to an edited book with an ISBN.
- iv. Viva Voce Examination by External Examiner: 30%**
  - Assesses the student's ability to present, explain, and defend their research effectively.
  - Evaluates the depth of understanding, analytical thinking, and the ability to respond to questions from the external examiner.

**(e)** In each semester there will be 22 credit courses.

(f) Students missing the **MID-TERM EXAMINATION** of any course for reasons like serious illness (to be certified by an authorized Medical Practitioner), demise of a parent or any other reasons as per University rules, may be allowed a **Make-up Examination** by approval of Hon'ble Vice Chancellor.

## **ASSESSMENT/EVALUATION OF ACADEMIC PERFORMANCE**

A student performance is measured by the number of Credits that he/she completed satisfactorily. A minimum number of Credits and Grade Points are required to be obtained for the student to continue in the programme. The performance of students will be assessed at the end of each Semester and Semester Grade Points (SGPA) awarded. After completing all the Semesters the Cumulative Grade Point Average (CGPA) will be calculated.

### **Evaluation and Grade Point Requirements for Master's Program**

As per University norms.

### **Types of Courses**

The Department offers a wide range of courses, generally categorized under following broad types:

- *Discipline Specific Core Course (DSC)*: A core course is a compulsory course. A Master's degree student of Economics has to take minimum six such Economics courses over four semesters
- *Elective Courses*: An elective course is a course that is to be chosen from a specified set of courses. These courses are of two types:
  - *Discipline Specific Elective Course (DSE)*: These are elective courses that provide advanced undergraduate training in specialised areas of Economics.
  - *Generic Elective Course (Other Department/Faculty) (GE)*: These courses, in disciplines other than Economics, are intended to broaden the training of a student in the Master's degree programme of Economics.
- *Ability Enhancement/Co-curricular Course (AECC)*
- *Skill Enhancement/Vocational Course (SEC)*

- *Internship/Project Work/Community Outreach (IP)*
- *Value Addition Course (VAC) : To be taken from a common pool of courses offered by different disciplines*

### Academic Framework for 2-Year (4 Semesters) Masters Programme

| Semester   | Core (DSC)<br>(4 credits)      | DSE/GE                       | SEC/Project/Dissertation | AEC/VAC | Total credits |
|--|--------------------------------|------------------------------|--------------------------|---------|---------------|
| 1  | (DSC) 3x4=12 or<br>(DSC) 2x4=8 | (DSE)2x4=8 or<br>(DSE)3x4=12 | Seminar/project (1x2=2)  |         | 22            |
| 2  | (DSC) 3x4=12 or<br>(DSC) 2x4=8 | (DSE)2x4=8 or<br>(DSE)3x4=12 | Seminar/project (1x2=2)  |         | 22            |
| <b>Exit option after One year with 44 credits with a PG Diploma in Economics</b>                         |                                |                              |                          |         |               |
| 3  | (DSC)2x4=8                     | (DSE) 3x4=12                 | Seminar/project (1x2=2)  |         |               |
| <b>OR</b>  |                                |                              |                          |         |               |
| i. Seminar (1x2=2)   |                                |                              |                          |         |               |
| ii. Dissertation/Academic Project/Entrepreneurship (1x20=20) <b>OR</b> (2x10=20)                         |                                |                              |                          |         |               |
| 4  | (DSC)2x4=8                     | (DSE) 3x4=12                 | Seminar/project (1x2=2)  |         | 22            |
| <b>OR</b>  |                                |                              |                          |         |               |
| i. Seminar (1x2=2)   |                                |                              |                          |         |               |
| ii. Dissertation/Academic Project/Entrepreneurship (1x20=20) <b>OR</b> (2x10=20)                         |                                |                              |                          |         |               |
| <b>After Two year with 88 credits the student will be awarded the Degree of M.A./M.Sc. in Economics.</b> |                                |                              |                          |         |               |

### Semester-wise Details of Courses

#### Semester I

| Sl. No. | Type of Discipline | Course Code | Course Title                         | Credit | L | T | P | Hours |
|---------|--------------------|-------------|--------------------------------------|--------|---|---|---|-------|
| 1       | DSC 1              | ECC 401     | Advanced Microeconomics              | 4      | 3 | 1 |   | 4     |
| 2       | DSC 2              | ECC 403     | Quantitative Techniques in Economics | 4      | 3 | 1 |   | 4     |
| 3       | DSE 1              | ECE 403     | Research Methodology                 | 4      | 3 | 1 |   | 4     |
| 4       | DSE 2              | ECE 404     | Indian Economy                       | 4      | 3 | 1 |   | 4     |

|  |       |         |                                     |   |   |   |   |   |
|--|-------|---------|-------------------------------------|---|---|---|---|---|
| 5                                      | DSE 3 | ECE 405 | Tourism and Sustainable Development | 4 | 3 | 1 |   | 4 |
| 6                                      | DSE 4 | ECE 406 | Environmental Economics             | 4 | 3 | 1 |   | 4 |
| 7                                      | DSE 5 | ECE 407 | Monetary Economics                  | 4 | 3 | 1 |   | 4 |
| 8                                      | DSE 6 | ECE 408 | Industrial Economics                | 4 | 3 | 1 |   | 4 |
| 9                                      | SEC   | ECS 401 | Programming with STATA              | 2 | 1 |   | 2 |   |
| <b>Total Credits in Semester I: 22</b> |       |         |                                     |   |   |   |   |   |

*Note: DSCs compulsory. In case of DSEs, choose any 3 courses.*

\*DSC- Discipline Specific Core; DSE-Discipline Specific Electives; SEC-Skill Enhancement Course, VAC -Value Added Course

L – Lecture; T – Tutorial; P - Practical

## Semester II

[illegible]



**Exit option after One year with 44 credits with a PG Diploma in Economics**

*Note:* Choose any 3 DSE courses

\*DSC- Discipline Specific Core; DSE-Discipline Specific Electives; SEC-Skill Enhancement Course, VAC -Value Added Course

L – Lecture; T – Tutorial; P – Practical

### Semester III

| Sl. No.                                  | Type of Discipline | Course Code | Course Title                                    | Credit | L | T | P | Hours |
|--|--------------------|-------------|---|--------|---|---|---|-------|
| 1  | DSC 5              | ECC501      | Development Economics                           | 4      | 3 | 1 |   | 4     |
| 2  | DSC 6              | ECC502      | Public Finance                                  | 4      | 3 | 1 |   | 4     |
| 3  | DSE 13             | ECE501      | Game theory & Applications                      | 4      | 3 | 1 |   | 4     |
| 4  | DSE 14             | ECE502      | Contemporary Issues in Economic Development     | 4      | 3 | 1 |   | 4     |
| 5  | DSE 15             | ECE503      | Economic History of India                       | 4      | 3 | 1 |   | 4     |
| 6  | DSE 16             | ECE504      | Law & Economics                                 | 4      | 3 | 1 |   | 4     |
| 7  | DSE 17             | ECE505      | Economics of Climate Change & Natural Resources | 4      | 3 | 1 |   | 4     |
| 8  | DSE 18             | ECE506      | Informal Sector and Economic Development        | 4      | 3 | 1 |   | 4     |
| 9  | VAC                | ECV501      | Programming with R                              | 2      |   |   |   |       |
| <b>Total Credits in Semester III: 22</b> |                    |             |   |        |   |   |   |       |

*Note:* Choose any 3 DSE courses

\*DSC- Discipline Specific Core; DSE-Discipline Specific Electives; SEC-Skill Enhancement Course, VAC -Value Added Course

L – Lecture; T – Tutorial; P - Practical

### Semester IV

| Sl. No.  | Type of Discipline | Course Code | Course Title                            | Credit | L | T | P | Hours |
|--|--------------------|-------------|---|--------|---|---|---|-------|
| 1  | VAC 4              | ECV551      | Machine Learning for Economic Modelling | 2      | 2 |   |   | 2     |
| 2  | SEC 1              | ECS551      | Dissertation                            | 20     |   |   |   |       |
| <b>Total Credits in Semester IV: 22</b>  |                    |             |   |        |   |   |   |       |
| <b>After Two years with 88 credits the student will be awarded the Degree of M.A. in Economics</b> |                    |             |   |        |   |   |   |       |

SEC-Skill Enhancement Course, VAC -Value Added Course

L – Lecture; T – Tutorial; P - Practical

**Paper Code: ECC 401**

**Advanced Microeconomics**

**Course Objectives**

This course equips students to understand consumer behavior and economic decisions making by households and firms and their interaction. It provides knowledge of producer behavior and production decisions using production functions and isoquant analysis. It also studies the equilibrium in presence of externalities/public goods and information asymmetry. Additionally, there will be a discussion of social choice theory and welfare economics.

**Course Learning Outcomes:**

Upon successful completion of this course, students will be able to:

**CLO1:** Analyse and appraise cardinal, ordinal and revealed preference approaches to consumer behaviour and able to Discuss various concepts of elasticity and its measurement.

**CLO2:** Apply the concept of elasticity in business decision making.

**CLO3:** Discuss the behaviour of production in short run and long run.

**CLO4:** Apply the theory of production in producer's decision making.

**CLO5:** Describe various revenue concepts and explain the behaviour of revenue under different market structures.

**CLO6:** Analyse short run and long run equilibriums under perfect competition and monopoly.

**CLO7:** Discuss the models of general equilibrium.

**CLO8:** Analyse the problems related to general equilibrium.

**CLO9:** Appraise various criteria for economic welfare.

**Unit 1: Theory of demand: Utility analysis** – Utility analysis; The indifference curve theory: Price, income and substitution effects (Hicks and Slutsky's views), Breaking up the Price effect into income and substitution effects; Normal, inferior and Giffen goods; Violation of the premises about indifference curves; Satiation and Lexicographical orderings; Elasticity of demand: Price, income and cross elasticity of demand, Elasticity of substitution; The Revealed Preference Theory.

**Unit 2: Theory of Production:** Concepts of production function, Product curves and Iso quants; Laws of production: Law of variable proportions, Stages of production. Degree of homogeneity and Laws of returns to scale, Ridge lines, Iso-cost line, Choice of optional combination of factors, Expansion path; Types of production function: Cobb Douglas, The CES and the Fixed coefficient production functions.

**Unit 3: Market Structure:** Basic concepts of Revenue, Relationship between Average Revenue, Marginal Revenue and price elasticity of demand; Theory of cost in the short run and long run, Market structure: Perfect Competition: Short run and long run equilibrium of a firm and industry. Monopoly: Short run and long run equilibrium of a monopolist; Price discrimination under monopoly. Monopolistic competition: product differentiation and the demand curve, short run and long run equilibrium of a firm. Oligopoly: Non-collusive oligopoly: The Duopoly models of Cournot, Bertrand, and Chamberlin's oligopoly model; The kinked demand curve model; Collusive oligopoly

**Unit 4: Theory of Distribution:** The general theory of factor price determination under perfect competition, monopoly and monopsony; Concept of exploitation of labor and role of labor unions in wage determination. Information economics: Types of asymmetric information- Moral hazard, Adverse selection, Signalling; Market for lemons; Principal agent problem; Efficiency of market outcomes under asymmetric information.

**Unit 5: General Equilibrium:** Meaning, Partial versus General equilibrium approach, Walrasian general equilibrium model, Tatonnement, Existence, Uniqueness and stability of equilibrium, Welfare economics: Criteria of social welfare- Value judgments in welfare economics, Basic theorems of new welfare economics- Pareto optimality and necessary conditions to achieve it; Market forms and welfare; Compensation principle: Kaldor-Hicks criterion; The Bergson criterion: Social welfare functions.

### **Recommended Books:**

#### **Text Books:**

1. Koutsoyiannis: A Modern Microeconomics
2. Henderson and Qandt: Microeconomic theory: A Mathematical Approaches

#### **Reference Books:**

1. Karl. E. Case, Ray C. Fair, Sharon E. Oster: Principles of Microeconomics, 12/e, Pearson Publication.
2. Varian, H : Micro Economic Analysis, W.W. Norton, New Delhi
3. R.Glenn Hubbard & O'Brien: Microeconomics, 7/e
4. Baumol, William J.: Economic theory and operations analysis (4th ed), PHI, new Delhi
5. Dominick Salvatore: Principles of Microeconomics, OUP India.
6. Ferguson & Gould: Microeconomic Theory, 6/e
7. Nicholson & Snyder: Microeconomic Theory, 11/e

## Paper Code: ECC 403

### Quantitative Techniques in Economics

#### Course Objectives

This course is designed to teach students advanced quantitative techniques in statistics and mathematics. The course gives quick refresher to some of the fundamental concepts in mathematics and statistics and Econometrics before delving deeper into the application side.

#### Course Learning Outcomes

**CLO1:** Elementary knowledge is gained about the measures of central tendency.

**CLO2:** Help students to successfully use Statistics and mathematics in economics and business applications and enhance their ability to communicate economic ideas and make economic arguments with the help of mathematical equations.

**CLO3:** Solve problems related to equilibrium of national income, market equilibrium and input-output modelling by applying the concepts of matrices and determinants.

**CLO4:** Solve optimization problems of consumers and firms using differential calculus.

**Unit 1:. Introduction to Statistics:** Meaning, Characteristics, Importance, Limitations of Statistics Collection of Data, Classification & Tabulation of Data, Diagrammatic & Graphic Presentation of Data.

**Unit 2:. Measures of Central Tendency:** Types of Averages: Arithmetic Mean, Weighted Arithmetic Mean, Median, Quartiles, Deciles, Percentiles, Mode, Interrelation between Mean, Median & Mode, Geometric Mean & Harmonic Mean

**Unit 3: Basic Mathematics for Economics:** Differentiation: Definition, Derivative of a function, Rules of Differentiation, Differentiation with single variable, Second and Higher order derivatives, Properties. Integration: Meaning, Basic rules, Indefinite and Definite integrals, Geometric representation. Matrix Algebra: Types, Matrix operations Addition, Subtraction and Multiplication. Rank of Matrix. Determinants: Matrix inversion, Cramer's Rule.

**Unit : Basics of Econometrics:** Definition: scope, goals and division of econometrics. Methodology of econometric research. Linear regression model in two and more than two variables, OLS, Statistical properties of least square estimates; Concept and uses of dummy variables.

**Unit 5: Violation of classical assumptions of regression model:** Multicollinearity, Heteroscedasticity and Autocorrelation; Simultaneous equation bias, and Inconsistency of ordinary least squares estimators, Identification problem; Estimation of simultaneous equation system through indirect least squares.

**Recommended Books:**

1. Baltagi, B.H. (2005). *Econometric Analysis of Panel Data*. England: John Willey and Sons.
2. Gujarati, N.D. (2003). *Basic Econometrics*. US: McGraw Hill.
3. Koutsoyiannis, A. (2001). *Theory of Econometrics*. UK: Palgrave Macmillan.
4. Research Methodology: Methods and Techniques, C.R. Kothari, New Age International, New Delhi
5. Business Research Methods, Donald R Cooper, McGraw Hill, New Delhi
6. Statistical Methods, Dr. S.P.Gupta, Sultan Chand & sons, New Delhi
7. Chiang A. C. (1984). *Fundamental Methods of Mathematical Economics*. New York: McGraw hill.
8. Taro, Y. (1988). *Mathematics for Economists*. New Delhi: Prentice Hall of India.
9. Klein M.W. (2017). *Mathematical Methods for Economics*. 2nd edition, Addison-Wesley.

**Paper code: ECE 403**

**Research Methodology**

**Course Objectives**

*This course aims to enhance students understanding about the fundamental concepts and importance of research and research methodology, research processes, familiarisation and application of various sampling techniques, and impactful report writing.*

## Course Learning Outcomes

*Upon successful completion of this course, students will be able to:*

**CLO1:** *Explain the meaning, objectives, and importance of research and distinguish between research methods and research methodology.*

**CLO2:** *Identify and formulate research problems and understand the steps and types involved in research design.*

**CLO3:** *Apply appropriate sampling techniques and determine sample size while evaluating sampling and non-sampling errors.*

**CLO4:** *Demonstrate an understanding of measurement and scaling, and identify sources of measurement errors.*

**CLO5:** *Formulate hypotheses and apply various tests of significance including t-test, f-test, z-test, chi-square, and analysis of variance (ANOVA).*

**CLO6:** *Develop and write comprehensive research reports, applying standard formatting and referencing styles with awareness of the mechanics and ethical considerations of report writing.*

**Unit-I Research:** Meaning, Objectives, Importance; Research Methods and Methodology  
Research Problem, Research Process; Research Design: Meaning, Importance and Types;  
Steps in Research Design; Features of a Good Research Design

**Unit-II Sampling:** Meaning, Methods, Merits & limitations; Census and Sample method,  
Characteristics of a good sample; Sample size, its determination, and Sampling and Non  
Sampling errors; Steps involved in Developing Sampling design.

**Unit-III Measurement and Scaling:** Measurement in Research, Measurement scales, Source  
of error in measurement scales; Hypothesis: Meaning Procedure of Hypothesis testing; Tests  
of significance for small & large samples t, f, z test; Chi square: Meaning, Steps involved and  
its uses; Analysis of variance: meaning & Techniques of Analysis of variances

**Unit-IV Report Writing:** Significance, types, steps involved, Outline of a research report;  
Mechanics of a Report writing and precautions to be taken in Report writing; Different  
Referencing Style

## Recommended Books:

### Text Book:

1. Research Methodology in Applied Econometrics: Don Ethridge, 2/e

## Reference Books:

1. Research Methodology: Methods and Techniques, C.R. Kothari, New Age International, New Delhi
2. Business Research Methods, Donald R Cooper, McGraw Hill, New Delhi
3. Statistical Methods, Dr. S.P.Gupta, Sultan Chand & sons, New Delhi
4. Research Methodology, Cauvery. R Sudhanayak U.K, Girija.M and Meenakshi. R.S. Chand & Company Ltd., New Delhi
5. Statistics for Management, Levin and Rubin, Asian Publishing House, New Delhi

**Paper code: ECE 404**

### **Indian Economy**

#### **Course Objectives**

This course will help learners to develop a clear understanding of the structure and functioning of the Indian Economy. It will enhance their ability to analyze economic problems and policy measures critically. The course will also prepare students for competitive examinations, research, and higher studies related to Indian economic issues. Additionally, it will equip them with knowledge to understand current economic debates, sectoral challenges, and government initiatives for inclusive growth.

#### **Course Learning Outcomes**

**CLO1:** After completing this course, learners will be able to:

**CLO2:** Understand the basic structure, features, and developmental issues of the Indian Economy.

**CLO3:** Gain knowledge about major economic problems like poverty, unemployment, inflation, and inequality.

**CLO4:** Analyze the role of government policies, planning strategies, and economic reforms in India's development.

**CLO5:** Evaluate the growth and challenges of agriculture, industry, and service sectors in India.

**CLO6:** Understand the importance of government intervention and financial inclusion in promoting economic development.



**UNIT I Basic features and problems of Indian Economy:** Economic Development since Independence- Features of Indian economy, Nature of Indian Economy, characteristics of Indian Economy, growth and development & overview of planned economic development in India. Demographic features and Human Resource Development (HDI), Problems of Poverty, Unemployment, Inflation, income inequality, Black money in India; Case Studies

**UNIT II Economic Policies:** Economic Planning in India, various Five-year plans in India, objectives and critical evaluation of India's five-year plans, Planning Commission v/s NITI Aayog, LPG Reforms in India, New Economic Policy, 1991 and Economic Reforms; Case Studies.

**UNIT III Sectoral comparison of Indian Economy:** Agriculture Sector : Pattern of Growth of Indian Agriculture since 1950. Regional Imbalances in Indian Agriculture. Issues in Agriculture sector in India, Land reforms; Green revolution, New agriculture policy of India. Industrial sector : Industry Act, 1948, Industry Act, 1956, Industrial development, industrial Policy pre and post 1991, small scale and cottage industries, Public sector in India. Import substitution Industrialization; Service sector: India's foreign trade, India's Balance of payment since 1991, FDI in India, Impact of Globalization on Indian Economy, EXIM policy, WTO and India.

**UNIT IV Government intervention and financial inclusion :** Social security measures in organized and unorganized sector; Pension; Health and medical insurance; disability benefits; Maternity benefits; Gratuity; Employment Program and Poverty-Alleviation schemes; public distribution system; Indian banking sector .

#### **Recommended Books:**

##### **Text books:**

Datt, R. & Sundaram, K.P.M. *Indian Economy*. S. Chand & Company Ltd., New Delhi.

Mishra, S.K. & Puri, V.K. *Indian Economy – Its Development Experience*. Himalaya Publishing House, Mumbai.

Uma Kapila (Ed.). *Indian Economy since Independence*. Academic Foundation, New Delhi.

##### **Reference Books/Journals/Reports:**

Jean Drèze & Amartya Sen. *An Uncertain Glory: India and its Contradictions*. Penguin Books.

Bimal Jalan (Ed.). *The Indian Economy: Problems and Prospects*. Penguin Books India.

Arvind Panagariya. *India: The Emerging Giant*. Oxford University Press.

Vijay Joshi & I.M.D. Little. *India's Economic Reforms, 1991–2001*. Clarendon Press, Oxford.

*Kurukshetra* – A journal on rural development

*Survey of India* – Annual publication by the Government of India

*Yojana* – Published by the Ministry of Information and Broadcasting, Government of India

NITI Aayog Reports and Working Papers

*Economic Survey of India* – Published annually by the Ministry of Finance, Government of India

RBI Handbook of Statistics on Indian Economy

**Paper code: ECE 405**

### **Tourism and Sustainable Development**

#### **Course Description**

This course offers an opportunity to learn about the complex relationship between tourism and sustainable development, with the help of economic theories and their application. It will evaluate the role of tourism as a driver of both economic growth and environmental degradation. Learners will be exposed to analyse the economic, social, and environmental impacts of tourism with the applications of tools and metrics for measuring sustainability in the tourism sector. The course covers topics such as tourism's contribution to poverty reduction and employment generation, policy instruments for enhancing the sustainability of tourism practices, with examples from India and other developing countries.

## **Course Objectives**

- Understand the role of tourism in national, regional and local development.
- Apply concepts of sustainable development to tourism and identify key socio-economic and ecological dimensions
- Equip students with relevant quantitative and qualitative methods for measuring and monitoring sustainability within the tourism sector
- Analyse the key environmental, socio-cultural and economic impacts of tourism
- Critically examine the policy initiatives and governance challenges associated with managing tourism for long-term sustainability

## **Course Outcomes**

At the end of this course, students will be able to:

1. Explain the inter-relationship between tourism, economic growth and sustainable development.
2. Apply the core concepts and principles of sustainability to the tourism sector.
3. Use appropriate tools to measure and interpret the economic and environmental impacts of tourism.
4. Assess the effects of tourism on local communities, natural resources and livelihoods
5. Critically assess policy initiatives and design recommendations for promoting sustainable tourism.
6. Learn about policy initiatives and assess their effectiveness for promoting sustainable tourism.

## **Course Structure**

### **Unit 1: Fundamentals of Tourism and Sustainable Development**

Concept and scope of tourism; demand–supply characteristics; multiplier effects and value-chain linkages; contribution of tourism to GDP, employment and trade; global trends and major regional patterns (with reference to India and Asia); tourism and the Sustainable Development Goals (SDGs); Tourism Satellite Accounts (TSA); contrasting models of tourism development (mass tourism vs eco-/community-based tourism).

### **Unit 2: Tourism and Sustainable Development: Interface**

Concepts, definitions and approaches of sustainable tourism; economic, social and environmental pillars of sustainability; carrying capacity and resource pressures; participatory

tourism planning; community-based, inclusive and low-impact tourism models; role of local institutions and stakeholders in promoting sustainable practices..

### **Unit 3: Measurement and Technical Aspects of Sustainable Tourism**

Sources of tourism statistics; estimation of tourist flows and value added; input–output methods; TSA compilation; indicators of sustainable tourism (UNWTO, SDG indicators, etc.); Environmental Impact Assessment (EIA); Life Cycle Assessment (LCA) for tourism planning.

### **Unit 4: Policies and Strategies for Sustainable Tourism**

International frameworks (UNEP, UNWTO, Agenda 21, COP declarations); national and state level tourism policies (with focus on India); Public-Private Partnerships (PPPs) in Sustainable Tourism Development; recent challenges – overtourism, post-COVID recovery, climate resilience; case studies of sustainable tourism initiatives in India and other developing countries.

### **Text Books**

Sinclair, M.T & Stabler, M. (1998). The Economics of Tourism. Routledge

Fennell, D. A., & Cooper, C. (2020). Sustainable Tourism: Principles, Contexts and Practices. Multilingual Matters

### **Reference Books**

Hannam, K., & Diekmann, A. (2010). Tourism and India: A Critical Introduction. Routledge.

Tisdell, C., & Wilson, C. (Eds.). (2012). Handbook of Tourism Economics: Analysis, New Applications and Case Studies. World Scientific Publishing.

Croes, R., & Yang, Y. (Eds.). (2022). A Modern Guide to Tourism Economics. Edward Elgar Publishing.

UNWTO (2022). Tourism Highlights. Madrid: World Tourism Organization

UNWTO, OECD & Eurostat (2010). Tourism Satellite Account: Recommended Methodological Framework 2008.

Weaver, D. (2006). Sustainable Tourism: Theory and Practice. Routledge.

UNEP/UNWTO (2005). Making Tourism More Sustainable: A Guide for Policy Makers

Ministry of Tourism, Government of India (Latest). National Tourism Policy (official document).

### **Articles**

Liu, Z. (2003). “Sustainable tourism development: A critique”, Journal of Sustainable Tourism, 11(6), 459–475.

Saarinen, J. (2006). “Traditions of sustainability in tourism studies”, Annals of Tourism Research, 33(4), 1121–1140

Frechtling, D. (2010). "The Tourism Satellite Account: A Primer", *Annals of Tourism Research*, 37(1), 136–153.

Seetanah, B. (2011). "Assessing the contribution of tourism to economic growth", *Journal of Sustainable Tourism*, 19(8), 935–950.

Dwyer, L., Forsyth, P. and Dwyer, W. (2010). "Tourism Economics and Policy", *Annals of Tourism Research*, 37(2), 647–666.

### **Paper Code: ECE 406**

### **Environmental Economics**

#### ***Course Objectives***

This course focuses on understanding the foundational principles of environmental economics and their relationship to welfare economics. In particular, economic principles are applied to environmental questions and their management through various economic institutions, economic incentives and other instruments and policies. The course explores theoretical and empirical methods for valuing environmental goods and services including valuation of environmental quality, quantification of environmental damages, tools for evaluation of environmental projects such as cost-benefit analysis and environmental impact assessments. It trains students to examine the link between environmental quality and sustainable development in the context of global and national frameworks

#### ***Course Learning Outcomes***

Upon successful completion of this course, students will be able to:

1. Analyze causes, consequences and economic costs of environmental problems
2. Learn application of welfare economics to environmental issues and identify economic criteria for evaluating environmental efficiency.
3. Identify and explain different forms of market failure (public goods, externalities) and critically assess their role in environmental degradation.
4. Distinguish between different types of environmental values (use, option, non-use) and apply various valuation techniques including travel cost method, contingent valuation, and hedonic pricing.
5. Define sustainable development and assess its importance in environmental economics, particularly in the context of the Sustainable Development Goals (SDGs) and India's environmental policy

2.

**Unit-I : Introduction:** Fundamental concepts in Environmental Economics, Review of welfare economics, Welfare economics and Environment; Economic criteria for efficiency, Welfare measures Circular flow model and Material Balance Model, Economic activity and environment quality – interactions and tradeoffs.

**Unit-II: Environmental problems-** Market failure, public good, externalities, relationship between public goods and externalities, Roots of environmental degradation property rights and the Coase Theorem, Pareto optimality and market failure in the presence of externality,

**Unit-III: Measurements of environmental values Environmental Policy:** Measurements of environmental values – use values; option values and non- use values; valuation methods – methods based on observed market behaviour; hedonic property values and household production models (travel cost method, methods based on response to hypothetical markets, contingent valuation methods. The market approach- types of market instruments, pollution charges, pigovian taxes, Measuring the benefit of environmental improvement (non – market values and measurement methods)

**Unit-IV: Environment and Sustainable Development:** Sustainable development- a Global objective, SDGs in Indian scenario, Environmental Kuznets Curve, International trade and environmental protection, Sustainable development measurement

### **Recommended Books:**

#### **Text Books:**

1. Thomas and Callan, (2009). *Environmental Economics*, Cengage Learning, India Edition
2. Kolstad, C.D. (1999). *Environmental Economics*, Oxford University Press, New Delhi

#### **Reference Books and Reports**

1. Hanley N., J.F. Shogren and B. White (1997). *Environmental Economics in Theory and Practice*, Macmillan.
2. Shankar, U. (Ed.) (2001). *Environmental Economics*, Oxford University Press, New Delhi.
3. World Bank (1993). *The World Development Report, 1993: Investing in Health*, O.U.P., New York
4. Baumol, W. J (1998), *The theory of environmental policy*, Cambridge University Press, & W.E. Oates Cambridge

4. Bromely, D.W (Ed) Handbook of Environmental Economics, Blackwell, London
5. Hussen, A.M (2004), principles of environmental economics, Routledge, London
6. Kolstad, C.D (2006), Environmental Economics, Oxford University Press, New Delhi
7. Sankar, U (Ed) Environmental Economics, Oxford University Press, New Delhi
8. Crones, R (1996), The theory of externalities and public goods, Cambridge University T. Sandler Press, Cambridge
9. Katar Singh, Anil Shishodia (2007) Environmental Economics, Sage Texts, New Delhi

**Paper Code: ECE 407**

**Monetary Economics**

**Course Objectives:** The course provides an introduction to monetary theory for understanding the evolution, nature, and functions of money, and its role in different economic systems. It equips students to analyze classical and modern theories of the demand for money, including alternative models and perspectives. It aims to explain the structure of money supply, its determinants, and the role of various financial institutions in the monetary system such as Reserve Bank of India.. This course will enable students to understand the interconnection between the monetary forces and real forces, their developmental role, and limitations in shaping and influencing the monetary and related policies both at the national and international levels.

***Course Learning Outcomes***

After completion of this course, students will be able to

1. Explore theory and functioning of the monetary and financial sectors of the economy
2. Analyze and evaluate the effect of their interaction in the real world.
3. Explain the instruments of monetary policy and their use in controlling inflation and managing recession

4. Critically analyze the role and policies of the Reserve Bank of India, including insights from the Narasimham Committee Report.

**UNIT-I Introduction:** Money - An Introduction Barter system and its defects, Gold Standard – Types – Working of the Gold standard – causes for the down fall of the Gold standard – paper currency standard. Meaning, Nature and functions of Money, Circular Flow of money, Role of Money in Capitalistic, Socialistic & Mixed Economy

**UNIT-II Demand for Money: Theories of Demand for Money** – Theory of Money – Classical (Fisher and Cambridge versions), Monetarists, Approaches of Keynesian, Approaches of Friedman (Restatement of quantity Theory), Baumol, Tobin and Pigou Effect

**UNIT-III Components of Money Supply:** Supply of Money, Determinants of money supply, High – powered money, Money multiplier, Credit creation, Commercial banks and Co–Operative Banks, Specialized financial and investment institutions, Non–Bank Financial Institutions and Regional Rural Banks.

**UNIT-IV Monetary Policy:** Concept of Monetary Policy, Objectives of Monetary Policy, Instrument of Monetary Policy, Effectiveness of Monetary Policy in Recession; Effectiveness of Monetary Policy in Inflation, Monetary Policy & Economic Growth. Monetary Policies of the Reserve Bank of India, the Narasimham Committee Report, the International Monetary System;

#### **Reference Books:**

1. Carl Walsh, “Monetary theory & Policy”, 4/e, The MIT Press
2. M.K. Lewis & Paul Mizen, “Monetary Economics”, Oxford University Press.
3. T.N Hajela Money Banking & Public finance, 8/e, Ane Books India, 2009
4. S. Frederic Mishkin, “Monetary Policy Strategy”, MIT Press..
5. M.R. Baye, D.W. Jansen (1996), Money Banking and Financial Markets, AITBS, (Indian Edition) R.B.I. Bulletin, Annual Report; Report on Currency and Finance
6. Y.V. Reddy (2000), “Monetary and Financial Sector Reforms in India” , UBSPD, New Delhi
7. Various latest issues of R.B.I. Bulletins, Annual Reports, Reports on Currency and Finance and Reports of the Working Group, IMF Staff Papers.



## **Paper Code: ECE 408**

### **Industrial Economics**

#### **Course Objectives**

In the contemporary world with globalization and liberalization, a growing attention is being given to industry. Since industry performance critically depends on firms' behaviour allowing equilibrium outcome, the course intends to provide rigorous knowledge of different long-run equilibrium outcomes of firms under different conditions from the point of view of public policy. It assesses the market performance in terms of efficiency, profitability, and capacity utilization, and understand the role of competition policy.

#### **Course Learning Outcomes-**

Upon successful completion of this course, students will be able to:

- Understand different market structures and evaluate their economic implications
- Evaluate Government's role by assessing the impact of government policies and regulation on industry competition.
- Identify factors for market failures and externalities and propose solutions
- Assess the implications of market structure on profitability, allocative efficiency, and productive efficiency, including the causes and consequences of sub-optimal capacity
- Understand the role of industrial policies in economic development and global trade.

**Unit I-** Business Structures and Their Economic Implications: Constraints of Proprietorship, Advantages of the Modern Corporation. Profit Maximization Hypothesis, Critiques of the Profit Maximization Hypothesis. Alternative Theories of the Firm– Non-Profit Maximization Models: Baumol, Williamson, Marris and Cyert and March. Critical Overview of Non-Profit Maximization Hypothesis.

**Unit II-** Monopoly Power and Oligopolistic Market Structure: Measures of Sellers' Concentration and advantages of the HHI index. Market Power and Efficiency Related Causes of Different Types of Merger: Horizontal; Vertical and Conglomerate. Causes of different types of Takeovers. Evaluation of Merger Policy.

**Unit III-** Market Conduct under Oligopoly: Concepts and Overview of Outcomes under Interdependence: Concepts of Cournot and Bertrand Rivalry, Collusive Conduct and Dominant Firm Behaviour and Potential Competition. Limit Price and Contestable Markets. Non-Price Competition with Reference to Advertising: Dorfman-Steiner Condition and its Critique. Evolution of Structure- Conduct-Performance Hypothesis.

**Unit IV-** Market Performance: Market Structure and Profitability; Collusion versus Efficiency. Issue of Allocative Efficiency. Issues of Productive Efficiency and Sub-Optimal Capacity; factors explaining sub-optimal capacity.

## Reference Books

1. Bain, Wildsmith, S. (1975) . Managerial Theories of the Firm.
2. Devine, P. J. & Others. (1976). Introduction to Industrial Economics, George Allen & Unwin.
3. Hawkin, C. J. (1973) .Theory of the Firm. Macmillan.
4. Hay, D. A. & Morris, D. J. (1991). Industrial Economics : Theory and Evidence. Oxford University Press.
5. J. S. (1968) Industrial Organizations (2nd ed.), University of California.
6. Martin Stephen (1989) . Industrial Economics (Economic Analysis and Public Policy

**Papre Code: ECV 402**

**Programming with STATA**

## Course Objective:

Data analysis with Stata is designed to train course participants to be professional data analysts. It is designed for participants without or with very little experience using Stata, but it requires basic knowledge on descriptive statistics.

## Course Learning Outcomes

Upon successful completion of this course, students will be able to:

**CLO1:** learn how to “talk” to Stata, importing data to Stata, constructing a workflow in Stata, dealing with missing data, data manipulation, running basic statistical routines, combining datasets, programming, creating communicative graphics, running regression models, and presenting statistical results.

**CLO2:** learn how to utilize loops and local or global variables, use advanced commands such as by, collapse, or reshape, and to create informative do-files.

Unit I Creating a working dataset from raw data

Stata environment, help files, and third-party packages, Using do-files: commenting, Importing data: excel, CSV, public data source, Cleaning the dataset: missing values, recode, renaming, and labelling, Describing the data: summarize, Using log files

#### Unit II Data manipulation

Generating new variables: gen, egen, xtiles, Using the by command, Logical expressions, Using preserve and restore, Keeping or dropping variables, Creating dummy variables, Combining datasets, Using the collapse command

#### Unit III Basic statistical routines

Creating a summary statistic, Correlation, Student t-test, Cross tabulation and Chi-squared test

#### Unit IV Graphics

Scatter plot, Line plot, Histogram, Bar graph, Pie chart, Fitted regression line.

### **Course Materials**

Students will need to access the following materials:

1. Lecture Notes. The lecture notes are a combination of slides and in-class notes. The lecture notes will be uploaded in a shared folder before each meeting.
2. Stata do-files. Do-files will compile commands and syntaxes discussed in the class. The do-files will be uploaded in a shared folder after each meeting.
3. Supplementary textbook:  
Statistical Methods for Social Sciences by Alan Press Agresti and Barbara Finlay, 2009.

## **Semester II**

**Paper code: ECC 451**

### **Advanced Macroeconomics**

#### **Course Objectives**

This course is designed to provide students with a comprehensive understanding of macroeconomic theory, both at foundational and advanced levels. It focuses on the functioning of macroeconomic aggregates such as output, employment, money supply, and interest rates in both closed and open economies. Through a rigorous theoretical framework, the course introduces key models of macroeconomic equilibrium, consumption and investment behavior, demand and supply of money, and financial markets. In the latter part, the course delves into growth theories, expectations, and contemporary models such as Real Business Cycles and New Keynesian approaches. Overall, it equips students to critically analyze macroeconomic policy interventions and long-run economic development.

#### **Course Learning Outcomes**

On successful completion of the course, students will be able to:

**CLO1:** Analyse aggregate demand and supply dynamics and determine macroeconomic equilibrium.

**CLO2:** Apply IS-LM and Mundell-Fleming models to assess policy impacts in closed and open economy settings.

**CLO3:** Understand consumption and investment decisions using classical and modern behavioral models.

**CLO4:** Evaluate theories of money demand and supply, and the role of financial markets in the macroeconomic system.

**CLO5:** Examine the macroeconomic implications of monetary and fiscal policy in the short and long run.

**CLO6:** Assess classical and endogenous growth models and analyse the effects of expectations on macroeconomic outcomes.

**CLO7:** Explore and interpret advanced macroeconomic models including Rational Expectations, Real Business Cycle, and New Keynesian frameworks.

## **Unit I: Aggregate Demand and Aggregate Supply; Equilibrium in the Economy**

Aggregate demand, Aggregate supply, Wages, Unemployment, Phillips curve analysis, Equilibrium output, Consumption function, Multiplier. IS-LM model, Money interest and income, Balance of payments, Mundell-Fleming model, Exchange rates under fixed and flexible rates.

## **Unit II: Economic Growth Theories; Policy Issues**

Neo-classical growth theory, Endogenous growth theory, Investment in Human capital, Policy implications of New growth theory. Monetary and Fiscal policy effects on equilibrium output, Expectations and reactions.

## **Unit III: Behavioural Foundation in Macroeconomics; Demand for Money**

Consumption theories – Keynes absolute, Relative Income Hypothesis, Life-cycle hypothesis, Permanent Income Hypothesis, Intertemporal substitution; Investment theories, Simple and flexible accelerator model. Quantity theory, Fisher's transaction approach, Baumol & Tobin's approaches, Keynes and Friedman's theories.

## **Unit IV: Supply of Money & Financial Markets; Advanced Topics**

Measures of money supply, Credit multiplier, RBI monetary policy, Financial markets, Asset markets. Rational Expectations model, Imperfect information, Aggregate supply curve, Random walk of GDP, Real business cycle, New Keynesian Model.

### **Recommended Books:**

- David Romer – Advanced Macroeconomics (McGraw-Hill Education)
- Olivier Blanchard – Macroeconomics (Pearson)
- N. Gregory Mankiw – Macroeconomics (Worth Publishers)
- H.L. Ahuja – Macroeconomics: Theory and Policy (S. Chand Publishing)
- Rudiger Dornbusch, Stanley Fischer & Richard Startz – Macroeconomics (McGraw-Hill Education)

**International Trade and International Finance**

**Course Objectives**

The course aims to provide students with a broad understanding of international trade and finance theories. It equips them with the tools to analyze trade flows, capital movement, exchange rates, and policy debates governing the global economy.

**Course Learning Outcomes:**

**CLO1:** Students understand theoretical foundations of international trade and how it impacts economic welfare.

**CLO2:** They will be able to evaluate tariffs, balance of payments, and the working of exchange rate systems.

**CLO3:** They will learn application of theoretical models—including the foreign trade multiplier and exchange rate theories—to understand how economies adjust to external imbalances

**CLO4:** Learners will understand how global integration and trade policies affect national economies.

**Unit-I: Theories of International Trade**

Theories of Absolute Advantage, Comparative Advantage and Opportunity Costs. Heckscher-Ohlin Theory of Trade, Factor Price Equalization Theorem, New Approaches to Trade Theory, New Theories of International Trade, Economic Growth and International Trade, Production Effects, Consumption Effects, Combined Production and Consumption Effects of Growth, Theory of Immiserising Growth, Prebisch-Singer Model

**Unit-II: Terms of Trade**

Concepts and Measurement of Terms of Trade, Factors Affecting Terms of Trade, The Effects of the Terms of Trade on a Nation's Welfare, Theory of Tariff, Partial Equilibrium Analysis of Tariff, General Equilibrium Analysis of a Tariff, Optimum Tariff and Retaliation

**Unit-III: The Balance of Payments and Adjustment in BOP**

Concepts and Components of Balance of Payments, Causes of Dis-equilibrium in the Balance of Payments, Measures to Correct BOP, Adjustment in BOP, The Process of Adjustment in the Balance of Payment under Gold Standard, Fixed Exchange Rate and Flexible Exchange Rates, Theories of Exchange Rate, Foreign Trade Multiplier

**Unit-IV: Economic Integration**

Custom Union and Free Trade Areas (Belt and Road Initiative Theory), Exchange Rate Determination, Theories of Exchange Rate Determination, Foreign Exchange Market, Contemporary Exchange Rate Systems, Foreign Exchange Transaction Forms, Foreign Exchange Arbitrage and Market Hedging

*Recommended Books:*

**Text Books:**

Dominick Salvatore: International Economics, 8/e, Wiley Publication

Bhagwati, J. (Ed.): International Trade, Selected Readings, Cambridge University Press

**Reference Books:**

Sodersten, B.: International Economics, The Macmillan Press Ltd., London

Cherunilam: International Economics, Tata McGraw Hill, 5th Edition

Chacholiades: International Trade, Theory and Policy, McGraw Hill

Deepak Nayyar: Trade and Industrialisation, Oxford University Press

**Paper Code: ECE 451**

## **Regional Economy of Himalayan States**

### ***Course Objective***

Himalayan region is unique in terms of its geography and niches over other regions. The course aims at to enhance students understanding about regional issues of economic development in Himalayan states of India such as structural transformation, livelihoods, migration, poverty and quest for sustainable development. The course offers empirical analysis of regional economy of Himalayan states with the applications of appropriate economic theories and statistical tools of analysis.

### ***Course Learning Outcome***

**CLO1:** Students get exposure to the regional dimensions of development challenges in Himalayan states.

**CLO2:** They are equipped to undertake state-specific economic analysis relevant to policy planning.

### **Unit 1: Mountain Economies and their Development**

Introduction- Regional economic development; Concepts and theories; Characteristics of mountain economies; Structural transformation and comparison with the Indian economy; Regional inequalities in select indicators of development; Multidimension poverty in Himalayan states; Development strategies for Himalayan region

### **Unit 2: Livelihoods, Employment and Migration**

Livelihoods: Meaning, quality and diversification—land and other assets, education; Characteristics of labour force and workforce; Structural changes in employment and recent trends; Unemployment and underemployment; Characteristics of migration and migrant workers; Impact of outmigration on income and household economy; Covid-19 and reverse migration; Climate change and impact on livelihoods

### **Unit 3: Sectoral Aspects of Himalayan Economy**

Agriculture: features and challenges; Industry: growth, composition and challenges Services sector; Trends, growth and challenges; Rural economy, Diversification of rural employment;



Tourism and its impact on income; Micro, small and medium enterprises; Infrastructure and regional economic development

#### **Unit 4: Sustainable Development**

Context and the concept; Difference between economic growth, development and sustainable development; From MDGs to SDGs; Sustainable Development Goals—targets, achievements and regional disparities; Public policy for promoting SDGs

#### ***Reading list***

Brunner Hans-Peter (Ed.) (2010). North East India Local Economic Development and Global Markets, Sage Publications

Dikshit, K. R and J K Dikshit (Eds.) (2014): North East India Land People and Economy, Springer Publication

Nayak. P. (Ed.) (2010). Growth and Human Development in North- East India, Oxford University Press.

Bhattacharjee, G. (2014). The Reality of Special Category States, Economic and Political Weekly, 29 (40)

Panda, B. (2010). "Economic Growth, Exclusion and Human Development in North Eastern Region of India" in P. Nayak (ed.) Growth and Human Development in North East India, Oxford University Press, New Delhi.

Kumar N, Rani R. (2019). "Regional Disparities in Social Development: Evidence from States and Union Territories of India". *South Asian Survey*, Vol. 26(1):pp. 1-27

Bhattacharya, Rakhee (ed) (2015). Regional Development and Public Policy Challenges in India, Springer

Dawkins, Casey J. (2003). "Regional Development Theory: Conceptual Foundations, Classic Works, and Recent Developments", *Journal of Planning Literature*, Vol.18 (2), Sage Publications

NITI Aayog (2021). Multidimensional poverty index, National Institution for Transforming India, New Delhi.

Newsham, [Andrew](#); Rigg, [Jonathan and Suhardiman](#), Diana (2022). "A Sustainable Livelihoods Framework for the 21st Century", *World Development*, Vol. 155, July.

Sengupta, R. P. (...). *Ecological Limits and Economic Development*, Oxford University Press.

Ray, Debraj - Development Economics

Panagariya, Arvind and Megha Mukim (2014). "A Comprehensive Analysis of Poverty in India", *Asian Development Review*, vol. 31, no. 1, pp. 1–52

United Nations (2021). *Sustainable Development Goals Report 2021*, United Nations, New York.

Pike , Andy; Rodríguez-Pose, Andrés and Tomaney, John (2006). *Local and Regional Development*, Routledge. (Chapter 1 and 3)

Mamgain, Rajendra P. and Reddy, D N (2016). Outmigration from Hill Region of Uttarakhand: Magnitude, Challenges and Policy Options, National Institute of Rural Development and Panchayat Raj, Hyderabad.

### **Paper Code: ECE 453**

### **Economics of Education and Health**

#### ***Course Objective***

As a course in applied economics, it aims to introduces students to education and health as an important component of human development in the framework of economic theory. This course provides a microeconomic framework to analyze, among other things, individual choice in the demand for health and education, government intervention and aspects of inequity and discrimination in both sectors. It also gives an overview of health and education in India.

#### ***Course Learning Outcomes***

**CLO1:** The students will learn the role of health and education in human development.

**CLO2:** They will be able to apply economic theory to understand the demand for health care, market failure in health insurance, economic evaluation of health care programmes and the role of public policy in the healthcare industry.

**CLO3:** They will also learn to analyse the returns to education, its role in labour market signalling, and the progress of schooling in India.

**CLO4:** They will also be exposed to the theories of discrimination and inclusion

**Unit 1: Role of health and education in human development:** health and education outcomes and their relationship with macroeconomic performance

**Unit 2: Theoretical Foundations of Health Economics:** Demand for health, uncertainty and health insurance market, alternative insurance mechanisms, market failure and rationale for public intervention; ,equity and inequality; Evaluation of Health Programs (Costing cost effectiveness and cost- benefit analysis, burden of disease).

**Unit 3: Health Sector in India:** Health outcomes, health systems, health financing, public policy for health sector; rationale for government intervention in the health sector

**Unit 4: Education:** Investment in Human Capital; Rate of return to education: private and social; quality of education, signalling or human capital, theories of discrimination, gender and caste discrimination in India;

**Unit 5: Education Sector in India:** An Overview; Educational Development; Public expenditure on education; Access and inequality in quality of education

**Readings:**

1. William, Jack, Principles of Health Economics for Developing Countries, World Bank Institute Development Studies, 1999.
2. World Development Report, Investing in Health, The World Bank, 1993.
3. Ronald G,Ehrenberg and Robert S, Smith, Modern Labour Economics : Theory and public policy, Addison Wesley, 2005.
4. Health Economics by Bhattacharya, Hyde, Tu (2012)

**Paper Code: ECE 454**

**Advanced Econometrics**

**Course Objective:** The objective of this course is to acquaint students with techniques and practices of Econometrics for formulating and estimating econometric models, including drawing inferences and forecasting.

**Course Learning Outcomes:**

- Augments students' capability for use of econometric reasoning.
- Develops capacity to formulate and estimate econometric models.
- Augments students' capacity to interpret, forecast and predict.
- Enhance students' capability to use of the econometric software.
- Helps students in their research work.

**Unit-1: Econometric modelling and estimation methods:** Economic models vs Econometric models, Econometric models: *Structural, Reduced, Final* and *Recursive* forms, Single-equation estimation: OLS, ILS, 2-SLS, LIML methods, Instrumental Variables vs Generalised Least Squares methods, System estimation: 3-SLS, FIML methods

**Unit-2: Qualitative Binary Choice Dependent Variable Models:** Assumptions, estimation procedure, advantages and limitations of the following models: LPM Model, LOGIT Model, PROBIT Model, TOBIT Model, Truncation vs Censoring

**Unit-3: Distributed-lags & Time-series Econometrics:** Role of Distributed lags in Economics, Koyck's Transformation and its rationalization, Why time-series data? Stochastic time-series, Stationary vs non-stationary time-series, Random Walk without Drift and with Drift models, Unit Root, Dickey-Fuller and Augmented Dickey-Fuller Tests

**Unit-4: Pooled / Panel Econometrics:** Why Pooled/Panel data?, Difference-in-Difference model, Fixed Effects, Random Effects, Hausman and other related tests

**Notes:**

*The learning techniques will involve exposition to theoretical explanations, solutions for numerical, use of an appropriate application software for estimation and testing. For estimation and testing, appropriate application software may be used. **For better understanding, every student will complete at least three mini assignments (maximum one from one unit) with the help of appropriate application software and data sets as available on websites.***

### **Suggested Readings:**

#### **Textbooks:**

Gujarati, Damodar ((2016): *Econometrics by example*, Palgrave

Gujarati, Damodar N,. (2004): *Basic Econometrics*, Tata McGraw-Hill

Madnani, G.M.K. (2009): *Introduction to Econometrics*, Oxford & IBH Publishing Co., Delhi

Johnston, J, (1972): *Econometric Methods*, McGraw-Hill

Koutsoyiannis, A. (2015): *Theory of Econometrics*, Palgrave

#### **Reference Books:**

Cameron, A. Colin, and Pravin K. Trivedi (2009), *Microeconometrics*, Cambridge University Press

Christ, Carl F. (1970): *Econometric Models and Methods*, Wiley Eastern

Greene, William H. (2006): *Econometric Analysis*, Pearson

Hilmer, Christiana E., et al (2020): *Practical Econometrics*, McGraw Hill

Joshua D. Angrist and Jorn-Steffen Pischke (2009): *Mostly Harmless Econometrics – An Empiricist’s Companion*, Princeton University Press

Maddala, G. S. (1999): *Limited-Dependent and Qualitative Variables in Econometrics* (Econometric Society Monographs), Cambridge University Press

Pedace, Roberto (2013): *Econometrics for Dummies*, John Wiley & Sons

Pesaran, M. Hashem (2015): *Time Series and Panel Data Econometrics*, Oxford University Press

Studenmund, A. H. (2019): *A Practical Guide to Using Econometrics*, Pearson

Walters A. A. (1970): **An Introduction to Econometrics**, Palgrave Macmillan

Wooldridge, Jeffrey M. (2010): *Econometric Analysis of Cross Section and Panel Data*, 2nd ed, MIT Press. Kindle Edition. England

## **Paper Code: ECE 455**

### **Public Economics**

#### ***Course Objective***

Public Economics is the study of government policy from the points of view of economic efficiency and equity. The course is designed to equip students in broad arenas of public finance and some other selected topics in public sector economics. An emphasis of the course is also on impact analysis of public policies on resource allocation and distribution in the economy

#### ***Course Learning Outcomes***

At the end of the course, the students will be able to:

**CLO1:** Understand the economic rationale for government intervention in the presence of market failures and the theoretical foundations of welfare economics.

**CLO2:** Improved understanding about the usefulness and problems related to taxation and government expenditure

**CLO3:** Assess production efficiency and competitive equilibrium in production economies through examples and models

**CLO4:** Enhances critical understanding of public policies strategies in the context of externalities and market failures.

**CLO5:** Analyse problems related to renewable common property resources including static and dynamic depletion models and the risk of extinction.

**Unit-I: The Economic Basis of Government Activity and Public Economics:** Market Failure, information and the role of the Government, Fundamental Theorems of Welfare Economics, Pareto Optimality

**Unit-II: Markets:** Exchange Economy, Edgeworth Box, Competitive Equilibrium, Utility Functions, Marginal Rate of Substitution, Pareto Optimal Allocations and Competitive Equilibrium. Production Economy: Pareto Optimality, Competitive Equilibrium with examples, Production Efficiency

**Unit-III: Surplus & Externalities:** Consumer and Producer Surplus, Welfare Cost of Intervention, Market Interactions, Externalities and Negotiation, Negotiated Compensation, Negotiation limits, Government Intervention

**Unit-IV: Permit Trading, Common Property Resources & Co-ordination Failures:** Environmental Pollution and Abatement, Direct Emissions Controls; Renewable Common

Property Resources, Static and Dynamic Common Property Problem, Extinction; Co-ordination Game, Co- ordination Game with Uncertainty

### **Recommended Books:**

#### **Text Books:**

1. John Leach , (2004) A Course in Public Economics , Cambridge University Press

#### **Reference Books**

1. Bowers, P.F. (1974): Private Choice and Public Welfare, Dryden Press, NY.
2. Buiter, W.H. (1990): Principles of Budget and Fiscal Policy, MIT Press.
3. Musgrave, Richard A. (1959): The Theory of Public Finance, Tata McGraw Hill, N.Y.
4. Mishra, B. (2006): Economics of Taxation: Theory and Application, Akansha Publishing House, ND.
5. Prest, A.R. (1975): Public Finance in Theory and Practice, Weidenfeld and Nicholson, London.

**Paper Code: ECE 457**

**Statistics for Economics**

**Course Objectives:**

The main objective of this paper is to train the students to use the techniques of statistics, which are commonly applied to understand and analyse economic problems. It acquaints with basic knowledge of Association of Variables and further extends the knowledge to Theory of Probability and Sampling Distribution. It also deals with analysis of data and drawing inferences about various statistical hypotheses.

**Course Learning Outcomes:**

After completion of the course, the student will be able to:

**CLO1:** Describe census and sample methods of data collection.

**CLO2:** Analyse relationship between economic variables using correlation and regression.

**CLO3:** Discuss various concepts related to theory of probability.

**CLO4:** Discuss various concepts related to hypothesis testing and their application in economic research.

**Unit-I Theory of Probability:** Axiomatic definition and derivation of basic probability rules- conditional probability, Baye,s Theorem, Random variable, Mathematical expectation and moments, standard probability distributions: Binomial, Poisson and Normal, Central limit Theorem

**Unit-II Sampling and Sampling Distribution:** Types of sampling, parameter and statistic, tests of significance, null hypothesis, errors in sampling, critical region and level of significance, tests of significance for large samples, sampling of attributes and sampling of variables, Chi-square, students t, F and Z tests

**Unit-III Statistical Inference:** Theory of estimation- characteristics of estimators, consistency, un-biasedness, efficient estimator, methods of estimation-least square and maximum likelihood, method of minimum variance and method of moments, Statistical Hypothesis- tests of statistical hypothesis, steps in solving testing of hypothesis problem

**Unit-IV Correlation and Regression:** Karl Pearson Coefficient of Correlation, Rank Correlation, Lines of regression, regression coefficients standard error of estimates, Partial and multiple correlations, coefficient of determination

**Recommended Books:**

**Text Books:**



1. Fundamentals of Mathematical Statistics- S.C. Gupta, 2012
2. An Introduction to Mathematical Statistics and its Applications- Larsen Richard J, prentice Hall, 2012

**Paper Code: ECE 458**

**Agricultural Economics**

***Course Objectives***

The course aims at to equip students with the basic understanding of various principles of economics that are applied to agriculture, particularly in relation to demand, supply, production, costs, markets and profits. in competitive and non-competitive and the role of agriculture in India. It teaches applications of economic principles to agricultural production, consumption, and market behavior, both in competitive and non-competitive environments. It examines the relationship between agriculture, population growth, international trade, and broader economic development. It evaluates the influence of agriculture on macroeconomic indicators and assess the role of economic policies in shaping agricultural outcomes.

***Course Learning Outcomes***

**CLO1:** Students get enabled to demonstrate a basic knowledge of the principles of economics and their application to understand issues pertaining to agricultural development.

**CLO2:** Able to assess market behavior under various competition models and the influence of global trends on agricultural trade and pricing

**CLO3:** Link agriculture to macroeconomic indicators for analysing the impact of macroeconomic policies, inflation, unemployment, and trade on agriculture's role in the national economy

**Unit-I Agriculture and Economic Development:** Characteristics of Agriculture, Definition of Agriculture, Agricultural Economics as a Social Science, Structure of Agriculture Sectors, Inputs Used and Products of Agriculture, Role of agriculture in economic development.

**Unit-II Principles of Economics in the context of Agriculture:** Production Principles, Production Costs, Supply and Revenue, Principles of Profit Maximization and Loss

Minimization, Principles of Consumption and Demand, Price Elasticity Concepts, Principles of Market Price Determination, Competitive vs. Non- Competitive Market Models, Global Issues

**Unit-III Agricultural Credit and Marketing:** Institutional and Non Institutional Agro credit, Role of Microfinance, recent trends in agricultural credit flow like Kisan credit cards. Role of Indirect finance, Marketing Food and Agricultural Products, Functional and Institutional Approaches to Marketing, Costs of Marketing Food and Agricultural Products, Operation of the Futures Markets, Farm loan waivers and impact. Evaluation of marketing efficiency, marketing channels ; Supply chain; E-distributor; E-market places, Agriculture Trade policies, Agricultural Problems and Policy Analysis , Goals and Policies and Programs

**Unit-IV Impact of Technology on Agriculture:** Modern farming methods and productivity; Incentives for farmers; Information dissemination to farmers; Mechanization; Mobile applications; Remote sensing, Crop Sensors; Precision farming; Soil and water sensors; Smart irrigation methods; Weather forecasting; GIS mapping; Aquaponics; Hydroponics; Financing investments in technology

#### **Recommended Books:**

##### **Text books:**

1. Reddy, S. Subba, Raghu Ram, P., Sastry, T. V. Neelakanta, & Bhavani Devi, I. (2023). *Agricultural Economics* (2nd ed.). Oxford & IBH Publishing.
2. Datt, Gaurav, & Sundharam, K. P. M. (2024). *Indian Economy* (73rd ed.). S. Chand & Company Pvt. Ltd.
3. Acharya, S. S., & Agarwal, N. L. (2022). *Agricultural Marketing in India* (7th ed.). Oxford & IBH Publishing.

##### **Reference books:**

1. Sadhu, A. N., Singh, Amarjit, & Singh, Jasbir. (2022). *Fundamentals of Agricultural Economics* (11th ed.). Himalaya Publishing House.
2. Penson, J. B., Capps, O., Rosson III, C. P., & Woodward, R. T. (2025). *Introduction to agricultural economics* (Revised 7th ed.). Cognella Academic Publishing.
3. Reddy S. S, Ram P. R, Sastry, T.V.K., Devi, I. B. *Agricultural Economics* (2015)
4. Government of India Five Year Plan, (Latest), Planning Commission. New Delhi.
5. Government of India, National Agricultural Policy, Ministry of Agriculture, New Delhi. (Latest). Government of India.
6. Chand, R. (2017). *Doubling farmers' income: Rationale, strategy, prospects and action plan*. NITI Aayog, Government of India.
7. Singh, S., & Kaur, R. (2021). *Digital Technologies in Indian Agriculture: Enhancing Productivity and Sustainability*. *Agricultural Economics Research Review*, 34(1), 1-1

## **Semester III**

**Paper code: ECC 501**

### **Development Economics**

**Course Objectives:** The study of economic development has gained importance because of sustained interest of the developing countries in uplifting their economic conditions by restructuring their economies to acquire greater diversity, efficiency and equity in consonance with their priorities. While few success stories can be counted, many have grappled with chronic problems of narrow economic base, inefficiency and low standard of living. For this and other reasons, there have been many approaches to economic development.

**Course Learning Outcomes:** The topics incorporated in this course are devoted to explore the theories of growth and development, social and institutional aspects of development and to understand the interdependence of the two sectors.

**Unit-I Introduction- Concept, History, Schools of Thought:** An Introduction to Economic Development, Growth v/s Development, Stages in Economic Growth: Marxian Stages, Rostow's Stages, Development equilibrium and disequilibrium; Influences of culture, geography and other factors on development; trickle-down theory; Myrdal's backwash effect.

**Unit-II Theories of Growth and Development:** Neoclassical economic theory: Solow-Swan growth model; Ramsey growth model; Empirics of neoclassical theory: Conditional and unconditional convergence; Endogenous growth theory: AK model; Romer model with knowledge spill overs and increasing returns to scale; Uzawa-Lucas model with human capital.

**Unit III Agriculture-Rural Development:** Land (tenancy, shareholding, and property rights); Labour (labour markets, shadow wages, wage determination); Migration (equilibrium models, causes and consequences, risks), The Models of Lewis, Fei and Ranis, Harris and Todaro model; Credit market – features of rural credit market, alternative credit policies; micro-finance (credit rationing, household credit, lending to the poor).

**Unit-IV Poverty and Inequality:** Concepts of poverty, Absolute and Relative Poverty, Measurement of Poverty, Functional Impact of Poverty, Economic Inequality, Measurement of Economic Inequality, The Inverted U Hypothesis, Income and Inequality, Inequality and Growth.

#### **Reference Books:**

1. Debraj Ray, Development Economics, Oxford University Press, New Delhi (1999)
2. Romer, P. M. (1986). Increasing returns and long-run growth. Journal of Political Economy,

94(5), 1002-1037.

3. Romer, P. M. (1990). Endogenous technological change. *Journal of Political Economy*, 98(5, Part 2), S71-S102.

4. Basu, K.: *Analytical Development Economics: The Less Developed Economy Revisited*. (Cambridge: MIT Press)

5. Thirlwall, A.P.: *Growth, and Development with Special Reference to Developing Economies*. Basingstoke, Palgrave Macmillan

6. Michael Todaro, *Economic Development*, Addison-Wesley, New York & London, Seventh Edition (2000)

7. Yotopoulos, P. A., & Nugent, J. B. (1976). *Economics of Development: Empirical Investigations*. HarperCollins.

### **Paper Code: ECC 502**

### **PUBLIC FINANCE**

#### **Course Objective**

This course introduces key concepts in public finance, emphasizing taxation, government expenditure, and fiscal policy. Students will gain analytical skills to evaluate direct and indirect taxes, understand public spending, and assess the welfare impact of policy options. Topics include the government's economic roles, debt management, budgeting, and fiscal federalism, with special focus on India's public finance system, including GST and tax reforms. By course end, students will critically evaluate fiscal policies and their implications on economic development.1. To enable students to understand regulatory and developmental responsibilities of the government and the changes there in

#### **Course Learning Outcomes**

At the end of the course, the students will be able to:

**COL1:** Explain the government's role in economic functions such as allocation, distribution, stabilization, and analyse concepts like market failure, public goods, and externalities.

**CLO2:** Evaluate fiscal policy as a tool for economic stabilization and growth, including public expenditure management and principles of public debt.

**CLO3:** Understand and apply theories of taxation, including tax incidence, optimal taxation, and benefit vs. ability-to-pay approaches.

**CLO4:** Analyse budgeting processes and fiscal federalism in India, including the role and recommendations of Finance Commissions.

**CLO5:** Assess India's public finance system, focusing on tax reforms, GST, fiscal consolidation, public expenditure trends, and debt issues.

### **Unit I: Role of Government**

Role of government in economic activity: Allocation, distribution and stabilization functions, Overview of Fiscal Functions, Tools of Normative Analysis, Pareto Efficiency, Equity and the Social Welfare; Market Failure, Public Good and Externalities; Elementary Theories of Product and Factor Taxation (Excess Burden and Incidence)

### **Unit II: Fiscal Policy Instruments**

Fiscal policy as an instrument of stabilization of growth-pump-priming, compensatory financing, functional finance, fiscal policy and inflation control, Fiscal policy and economic development- budgetary policy and growth. Fiscal policy for economic stabilization, Principles of Taxation: Benefit and ability to pay approaches; Theory of Tax Incidence; Theory of optimal Taxation, Public Expenditure Management & Control: Concepts. Theories of Public debt: classical and Compensatory views; Sources of Public debt; Burden of Public Debt; Principles of Management and Repayment.

### **Unit II: Budget & Fiscal Federalism:**

Purpose and Principles of budgeting, Budget as an instrument of economic policy, types of budget, programme budgeting, Budget Analysis Fiscal Federalism: meaning, principles, centre-state financial relations, Finance Commission, Constitution of the Finance Commission, Functions of the Finance Commission, Implementation of Recommendations of the Finance Commission, Fourteenth Finance Commission (FC IV), The Fifteenth Finance Commission

### **Unit IV: Indian Public Finance: Current Scenario**

Debates on Fiscal Consolidation and policy measures in India: Revenue, Fiscal and Primary Deficits; Fiscal Responsibility and Budget Management Act- Indian Tax System: An Assessment;

Tax and non- Tax Revenue of the Union, States and local bodies; VAT, CENVAT, Design and implementation of Goods and Services Tax (GST), Tax administration and implementation Issues in Tax reforms in India. - Structure, Trends and Pattern of Public Expenditure in India- Public debt in India: liabilities, Growth and Problem

### **References:**

1. Alan J. Auerbach and Martin Feldstein, (1985 & 1987) Handbook of Public Economics, Vol. 1 & 2, Elsevier, Amsterdam, North Holland.
2. David N. Hyman: Public Finance: A Contemporary Application of Theory to Policy, 8th Edition, (2005) Cengage Learning.
3. Dennis C. Mueller, (2003) "The size of government", In Public Choice III, Cambridge, University Press, Cambridge.
4. Francesco Forte (2011) Principles of Public Economics a Public Choice Approach,
5. Gayithri, K (ed) 2018, Public Budgeting in India: Principles and Practices, Springer, New Delhi
6. Government of India- Comptroller and Auditor General- Reports on Union and State Finances- Annual Issues
7. Government of India- Economic Survey- Annual Issues
8. Government of India- RBI State Finances- Annual Issues
9. Hindriks J and Myles GD. (2006), Intermediate Public Economics, Prentice Hall of India, Ltd. New Delhi.
10. Joaquim Silvestre (2013) Public Microeconomics Efficiency and Equity in Public Policy, University of California, Davis, US.
11. Jonathan Gruber, (2009) "Public Goods", In Public Finance and Public Policy, Worth, Publishers, Chapter- 7.
12. Joseph E. Stieglitz, (2010), Economics of Public Sector, W.W. Norton & Company.
13. Reddy, Y.V and G.R Reddy, (2019) Indian Fiscal Federalism, Oxford
14. Rosen, Harvey: Public Finance, McGraw Hill, (2013) New York.
15. Santra (2016) India Public Finance and Policy Report 2016: Fiscal Issues and Macro Economy, Oxford.

**Paper code: ECE 501**

## **Game Theory & Application**

### ***Course Objective:***

To introduce students to fundamental and advanced concepts of game theory. This course aims to build theoretical and practical understanding of strategic decision-making in both cooperative and non-cooperative settings.

### ***Course Learning Outcomes:***

At the end of the course, the students will be able to:

**CLO1:** Students will identify different game structures and solve using Nash, SPNE, and BNE.

**CLO2:** They will understand real-life applications of game theory in oligopoly, auctions, bargaining, and cooperation.

**CLO3:** Students will develop analytical tools for interpreting strategic interactions under uncertainty.

### ***Unit-I: Introduction to Game Theory and Static Games of Complete Information***

Types of games, Nash Equilibrium, Dominant strategies, Oligopoly models – Cournot, Bertrand, Stackelberg

### ***Unit-II: Dynamic Games of Complete Information***

Extensive form games, Subgame Perfect Nash Equilibrium (SPNE), Repeated games, Collusion in repeated games

### ***Unit-III: Games of Incomplete Information and Bayesian Game Theory***

Bayesian games, Bayesian Nash Equilibrium (BNE), Signaling and Screening games, Applications in oligopoly and auctions

### ***Unit-IV: Cooperative Game Theory and Applications***

Coalition formation, Shapley Value, Bargaining solution, Applications in oligopolies and public goods

### ***Recommended Books:***

- Martin J. Osborne – An Introduction to Game Theory (Oxford University Press)
- Robert Gibbons – A Primer in Game Theory (Pearson Education)
- Roger B. Myerson – Game Theory: Analysis of Conflict (Harvard University Press)

- Avinash K. Dixit and Barry J. Nalebuff – Thinking Strategically: The Competitive Edge in Business, Politics, and Everyday Life (W.W. Norton & Company)

**Paper Code: ECC 502**

### **Contemporary Issues in Economic Development**

**Course Objectives:** This course aims to train students in critical analysis of contemporary challenges and debates in economic development, with a focus on India. It assesses the role of technological advancements, innovation, and the digital economy in shaping India's development prospects and addressing socio-economic challenges. It helps in analysing policy responses using theoretical frameworks and empirical evidence, and enhance students' skills in using data, case studies, and policy documents.

#### **Course Learning Outcomes:**

By the end of this course, students will be able to:

**COL1:** Analyse and critically evaluate key contemporary issues in economic development

**COL2:** Understand and apply core development concepts in real-world contexts.

**COL3:** Assess challenges such as poverty, inequality, informality, and sustainability

**COL4:** Assess the role of technology in economic development and address issues such as the digital divide

**COL5:** Understand how institutional quality and political economy influence development

**COL6:** Engage in evidence-based policy debates and formulate informed viewpoints

**Unit 1: Introduction to Contemporary Development Issues:** Concepts of development: beyond GDP; Human development, sustainability, and well-being; Interdisciplinary perspectives: economic, political, ecological; Data sources: HDI, MPI, WDI, NFHS, NSSO

**Unit 2: Poverty, Inequality, and Social Exclusion:** Trends and measurement of poverty and inequality (global and Indian context); Caste, gender, and regional disparities; Social safety nets: PDS, MGNREGA, DBT; Debates on universal basic income (UBI)



**Unit 3: Technology, Innovation and the Digital Economy:** Role of Technological Change in Economic Development; The Rise of the Digital Economy: E-commerce, FinTech, and Digital Infrastructure in India; Artificial Intelligence, Automation, and the Future of Work in India; Digital Divide and Inclusive Growth in the Context of Technological Advancements; Policy Challenges in Regulating the Digital Economy in India.

**Unit 3: Employment, Informality, and Labour Markets:** Structural transformation and jobless growth; Informal sector: characteristics, challenges; Women in the workforce; Gig economy and platform labour; NEP 2020 and skilling initiatives

**Unit 4: Development Policy and Governance:** Federalism and fiscal decentralization; Role of state and market in development; Public service delivery reforms; Evidence-based policymaking and evaluation (RCTs, impact assessments)

**Suggested Readings:**

- Dreze & Sen (2013) *An Uncertain Glory: India and its Contradictions*
- Banerjee & Duflo (2019) *Good Economics for Hard Times*
- UNDP Human Development Reports
- Economic Survey of India (latest edition)
- World Bank Development Reports
- Acemoglu, D., & Robinson, J. A. (2012). *Why nations fail: The origins of power, prosperity, and poverty*. Crown Publishers.
- Bhagwati, J., & Panagariya, A. (2013). *Why growth matters: How economic growth in India reduced poverty and the lessons for other developing countries*. PublicAffairs.<sup>1</sup>
- Piketty, T. (2014). *Capital in the twenty-first century*. Belknap Press.
- Sen, A. (1999). *Development as freedom*. Oxford University Press.
- Stiglitz, J. E. (2002). *Globalization and its discontents*. W. W. Norton & Company.
- Subramanian, A. (2019). *India's Tryst with Destiny: Debunking Myths that Cloud India's Past and Challenge Its Future*. HarperCollins.
- Virmani, A. (2017). *India's Economic Future: Government, Markets and Reforms*. Academic Foundation.
- Reports and publications from the World Bank, International Monetary Fund (IMF), United Nations Development Programme (UNDP), Reserve Bank of India (RBI), NITI Aayog, and other relevant organizations focusing on India.
- Contemporary research articles from leading economics journals on development economics and the Indian economy.

**Paper Code: ECE 503**

**Economic History of India**

**Course Objectives:** This course offers a focused and critical exploration of India's economic history, from its pre-colonial foundations through the early post-independence period. It analyzes key economic transformations, the impact of colonial rule and associated intellectual critiques, the evolution of development debates and early planning, and aims to build analytical skills to understand the historical origins of India's present-day economic landscape.

**Course Learning Outcomes (CLOs):**

By the end of this course, students will be able to:

**COL1:** analyse pre-colonial Indian economy and early impact of European trade, including early economic thought.

**COL2:** Critically evaluate British Raj economic policies (land revenue, industry, infrastructure) and associated critiques.

**COL3:** Explain commercialization of agriculture and limited industrialization under colonial rule, analysing famines and the drain of wealth through nationalist economists' arguments.

**COL4:** Discuss the rise of economic nationalism, critiques of colonial policies by key thinkers, and early visions for independent development.

**Unit -1 Pre-Colonial Economic Structures and the Onset of Colonialism (Up to Mid-18th Century):** Features of the Indian Economy on the Eve of Colonialism: Agriculture, Trade, Manufacturing, Social Structures; Early European Trading Companies: Objectives, Operations, and Initial Economic Impact; Mercantilism and its Influence on Early Colonial Policies; The Rise of the East India Company and the Shift from Trade to Political Control; Early Forms of Exploitation and Revenue Extraction; Kautilya's Arthashastra.

**Unit-2 The Consolidation of Colonial Economic Rule (Mid-18th Century to Mid-19th Century):** Establishment of British Administrative and Economic Dominance; Land Revenue Systems: Permanent Settlement, Ryotwari, Mahalwari – Objectives, Implementation, and Impact; Rise of Commercial Agriculture: Cash Crops, Regional Specialization, and their Consequences; Early Infrastructure Development: Railways, Canals, and Communication – Colonial Motives and Economic Effects.

**Unit-3 Mature Colonialism and the Nationalist Critique (Mid-19th Century to Independence):** Deepening Integration into the Global Economy: Trade Patterns, Investment Flows; Limited Industrialization under Colonial Constraints: Growth of Select Industries, Labor Conditions; Famines in British India: Causes, Impact, and Policy Responses; The Drain of Wealth Theory: Analysis and Debate (**Dadabhai Naoroji**); Emergence of Economic Nationalism: Key Thinkers (**M.G. Ranade, G.K. Gokhale**) and their Critiques of Colonial

Economic Policies; Alternative Economic Visions within the Nationalist Movement (**Mahatma Gandhi's economic philosophy, early socialist ideas**).

**Unit-4 The Economics of Transition and Early Planning (1900-1964):** Economic Impact of the World Wars and the Inter-war Period on India; The Economic Context at Independence: Partition and its Economic Consequences; Intellectual Debates on Post-Independence Development Strategies (**Jawaharlal Nehru's vision**) , debates on industrialization vs. agriculture; The Establishment of the Planning Commission and the Rationale for Planning (**Influence of Soviet planning, contributions of P.C. Mahalanobis**); The First and Second Five-Year Plans: Objectives, Strategies (Heavy Industrialization), and Early Achievements and Limitations; Agrarian Reforms and Community Development Programs in the Early Post-Independence Era.

#### **Recommended Books:**

##### **Text books:**

1. Roy, Tirthankar. (2020). *The economic history of India, 1857-2010* (4th ed.). Oxford University Press.
2. Chandra, Bipan. (2017). *The rise and growth of economic nationalism in India: Economic policies of Indian national leaders, 1880-1905*. SAGE Publications.
3. Habib, Irfan. (2018). *An economic history of medieval India, 1200-1750*. Aligarh Historians Society.

##### **Reference books:**

1. Basham, A. L. (2005). *The wonder that was India*. Rupa Publications.
2. Dutt, A. K. (2018). *De-industrialization in India? A reappraisal*. Routledge.
3. Naoroji, D. (1988). *Poverty and un-British rule in India*. Commonwealth Publishers.
4. Ranade, M. G. (2001). *Essays on Indian economics*. Gyan Publishing House.
5. Nehru, J. (1989). *An autobiography*. Oxford University Press.
6. Chakravarty, S. (1987). *Development planning: The Indian experience*. Oxford University Press.
7. Nehru, J. (1946). *The discovery of India*. Penguin Books.
8. Kangle, R. P. (1997). *The Kautilya Arthashastra: A study* (2nd ed.). Motilal Banarsidass Publishers.
9. Nanda, B. R. (1958). *Mahatma Gandhi: A biography*. Allen & Unwin

## **Paper Code: ECE 504**

### **Law and Economics**

**Course Objective:** The objective of this course is to provide an economic perspective on legal frameworks and institutions. It focuses on how laws influence the behaviour of consumers and producers, distribution of resources, and the efficiency of economic outcomes.

#### **Course Learning Outcomes:**

**COL1:** Students gain insights into how legal rules affect market dynamics and economic behaviour.

**COL2:** They develop an understanding of the efficiency rationale behind legal rules in property, contracts, and torts.

**COL3:** Students will be able to evaluate legal principles through economic models and assess their impact on resource allocation.

**Unit-I: Economic Theory of Property-I** Efficiency Rationale for Private Property Rights, Tragedy of the Commons, Externalities, Coase Theorem, legal rules of strict liability Vs Property rights to injurer, Rules of First Possession, Tied Ownership, Intellectual Property Rights

**Unit-II: Economic Theory of Property-II** Patent Law, Efficiency rationale for monopoly over inventions, Optimal patent length and breadth, Establishment and verification of property right (title), Adverse Possession, Estray Statutes, Eminent Domain, Effect of Government Taking on Private Investment, Paradox of Compensation

**Unit-III: Economic Theory of Contracts** Legally enforceable contracts, Principal-Agent Problem, Liability Rules, Perfect expectations damages, sophisticated damages rules, Paradox of Compensation, Fraud: Mutual Mistake Vs Unilateral Mistake, Optimal fraud

**Unit-IV: Economic Theory of Torts** Comparison of Torts Vs Contract Law (DEM Reforms), Breach of Duty, New law Digital Data and Consumer Protection Act, Practices of Court on Torts, Strict Liability, Negligence Rule, Contributory Negligence Rules, Unilateral Vs Bilateral Precaution, Optimal legal rules to induce efficient outcomes, Products Liability, Consumer Product Safety Commission, Optimal regulation of industry, Court Errors in Damages, Enforcement Error, Res ipsa loquitur ("the thing speaks for itself")

#### **Recommended Books:**

Text Book: Robert Cooter and Thomas Ulen, *Law and Economics*, 6/e (U.S.: Pearson Education, Inc.) 2011

#### Reference Books:

Christine Jolls, Cass R. Sunstein and Richard Thaler - *A Behavioral Approach to Law and Economics*, Stanford Law Review [Vol. 50:1471]

Christine Jolls - *Behavioral Law and Economics*, NBER Working Paper 12879, January 2007

Christoph Engel - *Behavioral Law and Economics, Empirical Methods*, January 2013

Satish K. Jain - *Law and Economics*, Oxford Press

Bimal N. Patel, Ranita Nagar and Hitesh K. Thakkar - *Law and Economics*, South Asia Edition

Bimal N. Patel - *Economic Analysis of Law: An Indian Perspective*

#### Paper Code: ECE 505

#### Economics of Climate Change and Natural Resources

**Course Objectives:** This course is meant to provide students an exposure on different aspects of climate change and resource economics. It also equips students to analyse the complexities of climate change impacts on various sectors. It introduces readers to understand and apply advanced economic principles for the optimal management of renewable and non-renewable natural resources in the face of climate change and development pressures in India.

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#### Course Learning Outcomes:

By the end of this course, students will be able to:

**COL1:** become familiar with the scientific reasons and its broad impacts on natural environment

**COL2:** Understand numerous mitigation and adaptation strategy to minimize climate change impacts

**COL3:** Become familiar with contemporary climate change models, and managing natural resources

**COL4:** Able to assess the effectiveness of different policy instruments (e.g., property rights, taxes, subsidies, regulations) for sustainable natural resource management in the context of the influence of climate change

**COL5:** Become familiar with international negotiations and country specific commitments and understanding problems of renewable resources

## **Unit- I Climate Change and Natural Resources: Theoretical Foundations**

Science of climate change: Natural Factors, Anthropogenic factors, challenges in prediction; projections of future climate change. Defining natural resources, their importance, and examples (e.g., forests, minerals, energy sources).

- General Equilibrium Models and Climate Change: Introduction to CGE models, their application in analyzing the economy-wide impacts of climate policies in India.
- Dynamic Optimization and Resource Economics: Optimal control theory, dynamic programming, application to exhaustible and renewable resource management under uncertainty and climate change.
- Political Economy of Climate Change and Natural Resources: Interest groups, lobbying, rent-seeking, and the influence of political factors on environmental policy
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**Unit II Economics of Climate Change and Adaptation Strategies** Vulnerability assessment- their strengths and limitations, and their application to India-specific scenarios; Climate Change and Economic Growth: Endogenous growth models and the role of environmental factors, green growth strategies; economics of adaptation; measurement of adaptation cost; issues in financing adaptation; Externalities; environmental policy instruments: emissions trading, carbon tax, emission trading versus tax; stock pollutants and discounting; decisions under risk and uncertainty. Economics of Exhaustible Resources: Dimensions of Resource Scarcity – Physical and Economic Measures – Theories of Exhaustible Resources – A Simple Model of Optimal Depletion– Optimal Extraction & Harvest – Non-Renewable Resources.

## **Unit III Economics of Natural Resources**

- Economics of Renewable Resources: Fisheries, forestry, water resources – bioeconomic models, common pool resource management, and policy challenges in India; Economics of Non-Renewable Resources: Optimal extraction rates, resource scarcity, Hotelling's rule and its applicability to India's mineral resources; .
- Land Economics and Climate Change: Land use change, deforestation, agricultural land management, and the impact of climate change on land values and productivity;
- Biodiversity Economics: Valuation of biodiversity and ecosystem services, economic incentives for conservation, and the impact of climate change on biodiversity; .
- Environmental Regulation and Enforcement: Design and evaluation of environmental regulations, compliance and enforcement issues

## **Unit IV: Climate Change, Natural Resources, and Development in India**

**Impact of Climate Change on Key Sectors in India:** Agriculture, water, energy, health, infrastructure;

- Adaptation Strategies in India: Sector-specific adaptation measures, cost-benefit analysis of adaptation projects, and mainstreaming adaptation into development planning; Mitigation Policies in India: Achievements, challenges and opportunities for low-carbon development;
- Sustainable Management of Natural Resources in India: Balancing development needs with environmental sustainability, community participation, and the role of technology; Case Studies: In-depth analysis of specific climate change and natural resource management challenges and policy responses in different regions of India (e.g., Himalayan glaciers, coastal erosion, water scarcity in arid regions, renewable energy transitions).

### **Basic Reading List**

1. A.M. Hussen (2017), *Principles of Environmental Economics and Sustainability*, Routledge Publications.
2. Anjaneyulu, Y (2013), *Introduction to Environmental Science*, BS Publications, Hyderabad.
- 3.
3. Praful Bidwai (2013), *The Politics of Climate Change and Global Crisis*, Orient Black Swan, New Delhi.

Gollier, C. (2012). *Pricing the planet's future: The economics of discounting for climate change*. Princeton University Press.

Acemoglu, D., Aghion, P., Bursztyn, L., & Hémous, D. (2012). The environment and directed technical change. *American Economic Review*, 102(1), 131-166.

Barrett, S. (2007). *Why cooperate? The incentive to supply global public goods*. Oxford University Press.

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press

### **Additional Reading List**

1. Intergovernmental Panel on Climate Change – Fourth Assessment Report, 2007
2. Stern, N., *The economics of climate change – The Stern Review*, Cambridge University Press, 2006.
3. Toman, M.A., U. Chakravorty, and S. Gupta (2003), *India and Global Climate Change: Perspectives on Economics and Policy from a Developing Country*.
4. Kadekodi, G., (2013), “Is a Green Economy Possible?”, *Economic and Political Weekly*, Vol.48, No.25, June 22.
5. Mendelsohn, R., A.Dinar and A. Sanghi (2001), “The Effect of Development on the Climate Sensitivity of Agriculture”, *Environment and Development Economics*, Vol.6.

6. Mendelsohn, R., A.Dinar and L. Williams (2006), "The Distributional Impact of Climate Change on Rich and Poor Countries", Environment and Development Economics, Vol.11.
7. Mendelsohn, R., J.Arellano-Gonzales and P.Christensen (2010), "A Ricardian Analysis of Mexican Farms", Environment and Development Economics, Vol.15.
8. Mendelsohn, R., W.D. Nordhus (1996), "The Impact of Global Warming on Agriculture: Reply", American Economic Review, Vol.86, No.5.
9. Mendelsohn, R., W.D. Nordhus and D.Shaw (1994), "The Impact of Global Warming on Agriculture: A Ricardian Analysis", American Economic Review, Vol.84.
10. Nayak, Sanatan and Surendra Singh (2016), Impact of Climate Change on Agriculture: Approaches, Extent and Dimensions, in Kumar Surinder and C.S. Verma, (eds.), State and Capitalist Development in India: A Political Economy Perspective, Aakar Publications, New Delhi, 2016.

**Paper Code: ECE 506**

### **Informal Sector and Economic Development**

#### **Course Objectives**

#### **Course Learning Outcomes**

- ✓ *Enhanced understanding about the informal sector and its contribution in economic development.*
- ✓ *Equips students analysing the problems faced by informal sector enterprises and workers therein with the help of data and case studies.*
- ✓ *Improves knowledge about role of various policies and programmes in improving productivity and income of workers in informal sector for a decent life.*

#### **Unit 1: Informal Sector: Concepts, Characteristics and Significance:** Definitions of

informal sector and characteristics, Informal sector vs formal sector--Linkages; evolution of informal sector; measurement challenges and data sources, contribution of informal sector to employment and income generation

#### **Unit 2: Informal Employment and Working Poor :** Theoretical and Policy issues-Lewis

Theory, Todaro's Model, Fei and Ranis Model; Migration and Informal sector; Characteristics of informal enterprises and workers, Social exclusion, informality traps and vulnerabilities; Working poor, their characteristics, magnitude and causes; Covid-19 and informal workers

#### **Unit 3: Informal sector, Urbanisation and Globalisation:** Urban informal economies: Street



markets, informal settlements and informal employment; Challenges and opportunities of urban informal sector activities; Global value chains and the informal sector; Impact of trade liberalization and globalization on informal economies

#### **Unit 4: Policies and Programmes for Regulating Informality and Safeguarding Workers :**

Challenges and access to formal credit, infrastructure, technology, Social protection policies for informal workers; Policy challenges in regulating and formalizing the informal sector; Case studies of successful and unsuccessful policy interventions in different regions and sectors

#### **Recommended Books/Articles**

1. Williams, C. C. (2017). *The Informal Economy: Exploring Drivers and Practices*. Edward Elgar Publishing.
2. Fiol, M. A., & O'Boyle, E. J. (Eds.). (1999). *The Informal Economy in Developing Nations: Hidden Engine of Economic Development?* Praeger.
3. Kanbur, R., & Svejnar, J. (Eds.). (1999). *Informal Economy: Poverty or Development?* Routledge.
4. Zachariah, K. C., & Irudaya Rajan, S. (2008). *Informal Sector in India: Perspectives and Policies*. Institute for Human Development, New Delhi.
5. Kannan, K.P., Mamgain, Rajendra P and Rustagi, Preet (2017), *Labour and Development*, Essays in honour of Prof. T S Papola, Academic Foundation

#### **Reference Books**

1. Florence Bonnet, Joann Vanek and Martha Chen (2019), *State of working India, 2023*, Azim Premji University, ILO
2. India Labour and Employment Report, 2023, Indian Society of Labour Economics
3. Bonnet, Florence, Joann Vanek and Martha Chen. (2019). *Women and Men in the* 24  
*Informal Economy - A Statistical Brief*. Manchester, UK: WIEGO
4. Chen, Martha Alter (2022), *The Informal Economy: Definitions, Theories and Policies*, WEIGO
5. Radhicka Kapoor (2022), *Strengthening India's Social Protection Architecture for the Informal Sector: Lessons from the Covid-19 Crisis*, *Japan Labor Issues*, vol.6, no.40, November 2022